



SJR Environmental
Consulting

Voluntary Clean-up Plan (VCUP)

3330 Brighton Boulevard

Denver, Colorado

Prepared for:

3330 Brighton Boulevard, LLC
3455 Ringsby Court, #100
Denver, Colorado 80216

Prepared by:



SJR Environmental
Consulting

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EXECUTIVE SUMMARY

3330 Brighton Boulevard, LLC (Owner) wishes to develop a site located at 3330 Brighton Boulevard (the Site), Denver, Colorado. The proposed site improvements include a first level parking garage, an eight story hotel along with a two-story retail building including a restaurant, tavern, offices, and mercantile/retail stores. The site is located in a historical industrialized area of Denver.

Several Phase I and Phase I Environmental Site Assessments have been performed at the Site. The Site supported the Colorado Iron Works Foundry from the 1880s to the middle 1950s. Subsequently the site was used for various lumber companies, steel fabrication, auto salvage, semi-trailer parking, and recently for a parking lot to support nearby businesses. No structures currently exist at the site.

The Site has building debris from historical buildings that were razed. Low concentrations of PCE were identified in the soil and groundwater. Groundwater is only present on the south one-third of the Site due to a bedrock ridge across the site.

The purpose of the Voluntary Clean-up Plan (VCUP) is to identify steps to be taken during development to identify regulated environmental conditions at the site and then to introduce environmental controls for long term protection to the building and occupants. Potential contaminants of concern include

- historical building debris including the potential for asbestos-containing materials
- historical industrial setting and potential for up-gradient and offsite contaminants
- non-native fill materials have been imported and the potential for contaminants
- tetrachloroethylene (PCE) and its byproducts were identified in low concentrations in the soil and groundwater.

A Materials Management Plan (MMP) will be prepared to guide the handling of the soil, ground water, and construction debris during construction. The MMP will also address worker safety and protection from potential exposure to the contaminants of concern

In the event Regulated Asbestos Containing Soil (RACS) is encountered during soil disturbing activities associated with the planned activities, Section 5.5.7 of the Colorado Department of Public Health and Environment (CDPHE) Hazardous Material and Waste Management Division (HMWMD) Regulation will be followed using best management practices (BMPs). No known asbestos contaminated soil conditions exist at the site at the time this VCUP was prepared.

The potential exists for vapor migration of PCE and other volatile organic compounds into the enclosed portions of the new building. A sub-slab vapor mitigation system will be installed below the hotel and retail portions of the building to protect the building and occupants. Upon completion of development, the majority of the site will be covered by buildings or roads which will act as a cap for the underlying soil and groundwater.

Voluntary Clean-up Plan (VCUP) 3330 Brighton Boulevard Denver, Colorado

1.0 Introduction and Project Information

General Information

- Property size: 1.62 acres
- Current property owner: 3330 Brighton Boulevard, LLC
- Owner's representative: Bryan Bulatovic, 303-482-7207, brian@thebjbgroup.com
- How many homes: 100 hotel rooms
- How many jobs will be created: 400
- Parcel number with latitude and longitude:
 - Parcel 0227100036000
 - 39 degrees, 46'07"North; 104 degrees, 58'49" West
- Site Address: 3330 Brighton Boulevard, Denver, 80216, Denver County
- Contact person:
 - Thomas Norman, PE, SJR Environmental Services
 - 7800 South Highway 287, #202, Fort Collins, Colorado 80525
 - 970.214.4828
 - tnorman@sjrenvironmental.com
- Type of contamination: historical building debris, PCE
- Current land use and zoning: CMX12
- Proposed land use and zoning: CMX12
- Project background

3330 Brighton Boulevard, LLC (Owner) wishes to develop a site located at 3330 Brighton Boulevard (the Site), Denver, Colorado.

The Owner requested SJR Environmental Consulting Services, Inc. (SJRE) to prepare a Voluntary Clean-up Plan (VCUP) for proposed site improvements that include a first level parking garage, an eight story hotel along with a two-story retail building including a restaurant, tavern, offices, and mercantile/retail stores.

Several environmental investigations have been performed. The Site has building debris from historical buildings that were razed. Low concentrations of PCE were identified in the soil and groundwater. Groundwater is only present on the south one-third of the Site due to a bedrock ridge across the site.

The purpose of the VCUP is to identify steps to be taken during development to identify regulated environmental conditions at the site and then also to introduce environmental controls for long term protection to the building and occupants.

It is unknown if historical construction debris will be encountered during construction but a Materials Management Plan (MMP) will be prepared to guide the handling of the soil, ground water, and construction debris during construction. The MMP will also address worker safety and protection from potential exposure to vapors. Figure 1 provides a site plan and Figure 2 includes the proposed site improvements

In the event Regulated Asbestos Containing Soil (RACS) is encountered during soil disturbing activities associated with the planned activities, Section 5.5.7 of the Colorado Department of Public Health and Environment (CDPHE) Hazardous Material and Waste Management Division (HMWMD) Regulation will be followed using best management practices (BMPs). No known asbestos contaminated soil conditions exist at the site at the time this VCUP was prepared.

This Site was discussed with Phil Day and Fonda Apostolopoulos of CDPHE in November 2007.

2.0 Program Inclusion

- Is the Site listed or proposed for listing on the NPL? No
- Is there radioactive waste on the Site: No
- Were there above or below ground tanks that were not pulled before 12/22/1988? No
- Was there a release of hazardous waste (RCRA C) after 10/30/1980? No
- Was the site an old solid waste landfill? No
- Does the Site hold interim status for a RCRA TSD? No
- Is the property under corrective action pursuant to RCRA? No
- Is the property subject to an order pursuant to the Water Quality Control Division? No
- Is the property subject to the Department of Labor and Employment for underground storage tanks? No

Based on the Site not subject to the above criteria, the Site is eligible for the inclusion into the VCUP Program.

3.0 Environmental Assessment

3.1 Professional Qualifications

The VCUP was prepared by Thomas Norman of SJR Environmental Consulting Services. Mr. Norman is registered professional engineer, Certified Hazardous Materials Manager, and certified as an asbestos inspector, management planner, and designer. He has a bachelor's and master's degree in Civil/Environmental Engineering. He has over 35 years of environmental experience and his resume is provided in Appendix A.

3.2 Phase I Findings

3.2.1 Site History: Based on the Phase I Environmental Site Assessments discussed below, the following history of the Site is provided:

- 1881 or 1887 to between 1929 and 1951: Colorado Iron Works Foundry
- Early 1990's: Foundry buildings were razed
- 1937: Occupied by Hugh M. Woods Mercantile Company
- 1930s – 1950s' Occupied by Frank Paxton Lumber Company
- 1957: Occupied by Fraser and Johnston Company, a steel fabrication business
- 1960s: vacant plus occupied by O'Meara Motor Company and American Brokers Surplus and Salvage
- Through 1975: occupied by American Brokers Surplus and Storage
- Through 1989: Denargo Box and Burlap Company
- 1989: Remaining structures demolished.
- 1994 – 2012: Semi-trailer parking area

3.2.2 July 25, 2007 Phase I: Corn and Associates performed a Phase I Environmental Site Assessment (ESA) for the 3330 – 3340 Brighton Boulevard Site in accordance with ASTM Standard E1527-05 (Appendix B).

In 2007, no structures were present on the property except that a foundation of an old industrial building was identified. The site is asphalt covered and occupied by Trailer Rentals to store empty trailers. Because of the long history of industrial use, a Phase II investigation was recommended.

Corn and Associates did not identify any onsite evidence of contamination. The historic building was razed nearly 20 years ago and evidence of any potential environmental issues were not observed.

Several offsite historical recognized environmental conditions were identified (particularly leaking underground storage tanks). However all sites had either received "no further action required" from the Division of Oil and Public Safety or their distance and direction were not considered to have the potential to impact the Site.

3.2.3 July 30, 2013 Phase I: Terracon Consultants, Inc.: Terracon performed a Phase I ESA according to the ASTM Standard E1527-05 (Appendix C).

In 2013, the Site was undeveloped with evidence of a historic concrete building foundation, a historic rail line, four groundwater wells, and asphalt surface.

Previous Phase II studies had been performed identifying PCE and other VOC contamination along with onsite fill materials consisting of gravel, sand, small brick and concrete fragments, coal, and traces of glass and furnace slag (four to eleven feet below the ground surface).

Based on the long-term industrial use of the surrounding properties, the identified PCE contamination, and the historical industrial use of the Site, Terracon recommended additional investigation.

3.3 Phase II findings

3.3.1 Geology. Post-Piney Creek and Piney Creek Alluvium deposits are underlain by the Denver formation (gray, silty claystone and sandy siltstone) which is underlain by the Arapahoe Formation (interbedded conglomerates, sandstones, siltstones, and clay shales. The Denver and Arapahoe Formations are approximately 1,000 to 1,200 feet thick and underlain by the Fox Hills Sandstone (200 feet thick) and Pierre Shale (5,000 to 8,000 feet thick). The regional dip is generally westerly.

Typically three to ten feet of fill material (silty sands) overlies native sands. The fill material also included coal, coal dust, gravel, sand, brick, and some clay. The presence of building construction debris was not mentioned. Bedrock was typically encountered between 11 to 27 below ground surface.

3.3.2 Hydrogeology. Shallow groundwater is located in the alluvium at approximately 19 to 25 feet below the ground surface. Regional groundwater flows toward the South Platte River in a northwesterly direction. However at the Site, groundwater flows in a northeasterly direction. Groundwater was only observed on the southeast side of the site.

3.3.3 Surface Water. The nearest surface water is the South Platte River which is located approximately 700 feet northwest of the property.

3.3.4 November 12, 2007 Report: Corn and Associates performed additional groundwater sampling in October 2007. Nine borings were installed in the north 2/3 of the Site that did not produce groundwater. Five monitoring wells were installed on the south 1/3 of the site that produce groundwater. Groundwater was encountered at 22 to 23 feet and the direction was to the northeast.

The five new wells were sampled and PCE and several of its degradation products were detected in four of the five wells; however, Colorado groundwater quality standards were only exceeded in two wells (7 and 23 ug/L) on the east corner of the Site. The report recommended applying for a No Action Determination from CDPHE. See Appendix D.

3.3.5 September 8, 2008 Report: Casey Resources Inc. performed a subsurface investigation of the property and adjoining lot. The property contained no structures but former concrete foundations and railroad rails from historical industrial uses were exposed on the site. The property was used to store 40 - 50 tractor trailers.

The purpose of the investigations was to collect soil and groundwater data to supplement existing data. The purpose was also to determine if the Site potentially contained a source area for PCE and other VOCs or the source(s) originated from an offsite source.

Field Investigation: The investigation included drilling and sampling 27 small diameter shallow soil borings with 16 converted to vapor monitoring points. Three groundwater wells were drilled and installed to bedrock. The three new groundwater wells and five existing wells were sampled.

Non-native fill was found in all soil borings with a thickness ranging from four to eleven feet. The fill material consisted of sand and gravel with small brick and concrete fragments, coal, and pieces of glass and furnace slag. The report did not mention whether suspect asbestos construction debris was present.

The investigation confirmed that a bedrock high occurs on the western half of the Site.

Field Screening: XRF was used to field screen soil samples for metal content. Only two detections were recorded for arsenic at 18 and 23 mg/Kg. The total arsenic concentration in the site soils were less than the CCOD's arsenic cleanup level of 25 mg/Kg.

The XRF screening identified total lead in all soils analyzed with a range of 14 to 483 mg/Kg and an average of 96 mg/Kg. Only one soil sample (location MW-06) had a concentration (483 mg/Kg) greater than the CDPHE soil cleanup value of 400 mg/Kg for total lead.

PID samples were collected during drilling and the highest readings (up to 9.3 ppm) were found in the upper four feet of the non-native fill materials. The PID results did not indicate an onsite source of VOCs.

Soil Analysis: Four soil samples from the non-native fill material were laboratory analyzed for VOC, PAHs, and eight RCRA metals. The soil laboratory results were compared to CDPHE guidelines for residential (non-restricted) and commercial landuse values with the exception of arsenic which was compared to CCOD soil cleanup values of 24 mg/kg.

For the total metals, none of the laboratory data exceeded CDPHE values for residential landuse.

PAH compounds were detected in the soil samples. Benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene exceeded CDPHE guidelines for residential soil cleanup value in at least one soil sample. Benzo(a)pyrene concentration of 1,500 ug/Kg exceeded the CDPHE guidelines for commercial cleanup of 610 ug/Kg.

PCE was detected in two of the soil samples at concentrations of 47 and 79 ug/Kg but did not exceed the CDPHE residential guidelines of 450 ug/Kg.

Vapor Assessment: The vapor wells were monitored on three occasions using a PID instrument for field screening. Low concentration of volatile vapors were detected in some of the monitoring points with the greatest concentrations measured in the east-central portion of the site. The vapor concentrations were not consistent in magnitude

nor location for the three monitoring dates. The highest concentration of 14 ppm is not indicative of a significant source condition.

Groundwater Analysis: The eight monitoring wells were surveyed, sampled and analyzed for VOCs. The groundwater contours suggest two groundwater flow channels on the property: (1) first channel enters the Site from the southwest originating from 3280 Brighton Boulevard and (2) the second channel enters from the south-southeast originating from sites to the east of the Site.

PCE was the only VOC that was detected. Six of the eight monitoring wells had detectable concentrations of PCE ranging from 2.7 to 19 ug/L. Two of the wells (5.7 and 19 ug/L) exceeded the Colorado groundwater standard of 5 ug/L.

The report concluded that some of the PCE concentrations are migrating onto the Site from an upgradient/offsite source; however, the increase of PCE concentration at monitoring well MW-04 still suggests a potential onsite source condition.

The report recommended the submittal of a VCUP for the proposed development of the Site. The VCUP application should include a Material Management Plan on how to handle excavated soils and how to implement health and safety issues both during construction and long term exposures. A passive venting system beneath new structures is recommended due to low concentrations of VOCs.

See Appendix E.

3.3.6 May 6, 2013 Well Sampling Letter: Casey Resources Inc. (CRI) Environmental Engineering and Consulting sampled four existing monitoring wells at the Site. The monitoring wells were installed in 2007 and 2008 along the east and southeast side of the property. PCE was detected in three of monitoring wells (5.63 to 9.05 ug/L) above the groundwater standard of 5.0 ug/L. Chlorobenzene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene were detected for the first time although well below the Colorado Groundwater Standards.

The letter recommended applying for a No Action Determination from CDPHE.

See Appendix F.

3.3.7 January 22, 2015 Report: Professional Service Industries (PSI) performed a geotechnical engineering evaluation (Appendix G) for a proposed Source Hotel at 3300 Brighton Boulevard. The site is being used as a parking lot for the adjacent The Source Restaurant. The surface is worn with the presence of asphalt, concrete, gravel, and dirt. The sight slopes from the southeast to the northwest with approximately seven feet of relief. Proposed site improvements include cutting approximately three feet of surface material.

Eleven exploratory borings were installed in anticipation of the development of a parking garage, hotel, retail area, and drive lanes. The borings were logged by an onsite engineer.

Fill material was encountered generally from three to ten feet in thickness and described as silty sand. The fill material included coal, coal dust, gravel, sand, brick, and some clay. The fill material was underlain by native overburden soils (11 to 30 feet below grade) consisting of light brown to brown, moist, loose to medium dense, silty and poorly grade sands. Sedimentary bedrock was located under the native overburden soils. The sedimentary bedrock consisted of brown to blue, moist to saturated, hard, fine to medium grained, sandy claystone bedrock. Bedrock was encountered at depths 11 to 27 feet and continued to the termination of the borings.

Groundwater was encountered at depths ranging from 19 to 24 feet. Groundwater was not encountered in the six borings located on the northwest side of the Site.

The geotechnical report recommends removing the fill materials down to the native sands and then removing the topsoil, vegetation, concrete, and asphalt. The non-native fill materials can then be reused if it is moisture conditioned and re-compacted as structural fill.

See Appendix G.

3.3.8 Contaminants of Concern:

In summary, the following are the contaminants of concern:

1. **Historic Industrial Use.** The long-term historic industrial use of the site as a foundry raises the potential for unknown contamination. However, over thirty bore holes and wells have been drilled on the Site. Low concentrations of PCE and PAHs were identified but no major evidence of historical contamination has been documented.
2. **Potential Off-site Sources.** The Site is located within an industrial setting and there is the potential for off-site sources of contamination. The major avenue of contaminant migration is through the groundwater system. Several subsurface investigations have been performed and groundwater contamination was only identified for PCE and its by-products.
3. **PCE and By-products.** Low concentrations of PCE and its by-products were identified in the soil and groundwater. PCE concentrations above Colorado groundwater standards were identified in select wells located in the southeast corner of the site. Groundwater was only identified in the south $\frac{1}{3}$ of the property.
4. **Non-native Fill and Construction Debris.** The site has had historical site improvements including buildings. Although not identified in the subsurface investigations, the potential exists for asbestos debris from the historical buildings. Non-native fill is located throughout the site and may contain contaminated soils.

4.0 Applicable Standards/Risk Determination

4.1 Estimated Extent of Contamination

Historical Debris: The estimated extent of the historical debris is the entire site as evidenced by non-native fill material located throughout the site. Non-native fill was verified during the Phase II and Geotechnical Investigations.

Soil:

PCE: In the September 2008 study, five soil borings and sixteen vapor points were installed, four soil samples were collected based on field parameters (0-4 feet depth, non-native fill material). PCE was identified in two of the four soil samples and was not detected in the soil sample from the north side of the site. The low concentrations of PCE and by-products in the groundwater is located on the south $\frac{1}{3}$ of the Site. The low concentrations of PCE were detected in the near surface layers of soil (0 - 4 feet) on the south $\frac{1}{3}$ of the site. This data suggests that the non-native fill materials on the south one-third of the site may contain low concentrations of PCE contamination.

Polynuclear Aromatic Hydrocarbons (PAHs): In the September 2008 study, five soil borings and sixteen vapor points were installed. Four soil samples were collected based on field parameters (0 – 4 foot depth, non-native fill materials). PAHs were identified in three of the four soil samples including a boring located on the north side of the site. This data suggests that the non-native fill materials across the site may contain low concentrations of PAH contamination.

Groundwater:

In the November 2007 study, PCE was detected in seven of eight monitoring wells ranging from 2.0 to 23 ug/L. The wells were located on the south $\frac{1}{3}$ of the site. PCE contamination was identified in one of the two upgradient wells and increased across the site.

In the September 2008 study, PCE was detected in six of the eight monitoring wells ranging from 2.7 to 19 ug/L. The wells were located on the south $\frac{1}{3}$ of the site. PCE contamination was identified in two of the four upgradient wells and increased across the site. Groundwater was detected at depths of 19 to 24 feet.

In the May 2013 study, four monitoring wells were sampled on two occasions. PCE was detected in all four wells ranging from non-detect to 19 ug/L. The wells were located on the south $\frac{1}{3}$ of the site. PCE contamination was identified in the upgradient well and increased across the site.

In summary, PCE contamination and some its by-products were identified in the groundwater on the south $\frac{1}{3}$ of the site.

Soil Vapor:

In the September 2008 study, sixteen vapor points were installed on the south $\frac{1}{3}$ of the site and were sampled on three different occasions. Vapor monitoring was not

performed on the north 2/3 of the site as no groundwater was present. Volatile vapor concentrations were identified in ten of the vapor wells. The upgradient vapor points did not detect volatile vapors. This data suggests that the non-native fill materials on the south one-third of the site contain low concentrations of volatile vapors indicating PCE contamination. Although no vapor monitoring was performed on the north 2/3 of the site, vapor migration should not be ruled out.

Risk Based Assessment Levels

CDPHE refers to the EPA Region 3 Risk Based Assessment Levels (June 2015) for evaluating potential risks to residential and industrial exposures. The following table summarizes the data for PCE.

PCE Risk Based Assessment Levels

Media	Residential	Industrial Level	Site Ranges
Soil (mg/kg)	24	100	ND - 79
Air (ug/m ³)	11	47	ND-13.1*
Tapwater (ug/L)	11		ND - 23
Maximum contaminant level (water) (ug/L)	5		ND - 23

* Air samples included all volatile organic vapors and were not specific for PCE.

4.2 Exposure Pathways and Mitigation

4.2.1 During Construction:

During construction, there will be potential exposure for workers to contaminated soil, historical debris, asbestos debris, groundwater, and vapor contamination. A MMP will be developed (provided separately) to address identifying hazards and potential exposure to workers during construction.

Groundwater will potentially be encountered during the construction of the building's caissons. Groundwater will be collected, stored, and transported offsite to a permitted wastewater treatment facility. Groundwater was only encountered in the southeast one-third of the site.

Exposure to soil, historical debris, asbestos debris, and vapors are possible during any soil disturbance activity. The MMP will identify training, hazard identification, and worker health and safety. Contaminated soils will be removed from the Site and disposed in a permitted landfill.

The MMP will include a section on identifying and managing asbestos debris exposed during excavation activities. If asbestos debris is identified, Section 5.5.7 of the CDPHE soil regulations will be followed including notification of CDPHE. Details will be provided in the MMP.

4.2.2 Site Occupants:

Soil: Over 95% of the site surface will have a hard barrier (concrete) either in the form of a parking garage, retail stores, hotel, or roadways. A small area on the mid-east side of the site (see Figure 2) will have a terrace for the restaurant (hard surface) along with a small landscape area for trees. No areas are provided that provide access to surficial soils for building occupants. Landscapes areas will have a minimum of two feet of topsoil to promote plant growth and to provide a buffer against the non-native fill.

Groundwater: For site occupants, there will not be any exposure to groundwater due to the depth of the groundwater (>19 feet) and groundwater not being used.

Vapor: The area of the site (southeast 1/3) with the PCE soil and groundwater contamination has been identified for the parking garage. There is the potential for vapor migration into the garage and potentially sub-slab vapor migration into the other parts of the building. A sub-slab passive ventilation system is proposed for areas of the building that are enclosed. The sub-slab passive ventilation system will have the potential for adding an active blower system.

The following table summarizes the potential exposure pathways and mitigation.

Potential Exposure Pathways Summary

Potential Pathway	Site Occupants	Construction Workers
Dermal Contact	No	Yes
Ingestion (dust, water)	No	Yes
Vapor inhalation	Yes	Yes
Leaching to groundwater	No	No
Migration to surface water	No	Yes
Asbestos inhalation	No	Potential

4.3 Remedial Action Plan

4.3.1 During Construction

Dermal: The potential exists for dermal exposure to soil and groundwater contaminated with PCE to workers. A MMP will be developed and implemented. Workers will be instructed on proper PPE and recognizing hazards.

Ingestion (dust, water): The potential exists for ingestion of dust during construction by workers. A MMP will be developed and implemented. Dust control measures will be implemented as a standard BMP for construction projects.

Vapor Inhalation: The potential exists for vapor inhalation of PCE vapors during construction by workers. A MMP will be developed and implemented. Vapor monitoring

will be performed when construction is below grade. If elevated concentration of PCE are detected, either engineering controls will be implemented or proper PPE will be worn for worker protection.

Leaching to Groundwater: The potential for leaching PCE into the groundwater has been a historical issue. The construction activities will not make increase the potential for additional groundwater contamination. If soil and groundwater contamination is identified, the contaminated media will be identified, stored, and hauled offsite for proper disposal. Removal of the contaminated materials will reduce the potential for leaching into groundwater.

Migration to Surface Water: The potential for migration of contaminants to surface water will be minimized with the implementation of a stormwater management plan. Once excavation begins, the runoff pattern will be towards the excavation which will eliminate runoff. If contaminated materials are excavated and stored onsite, BMPs will be implemented to capture runoff.

Asbestos Inhalation: There is no documentation at this time that asbestos debris is present at the site. None of the previous subsurface investigation reports mentioned asbestos debris. However since the site has had historical buildings, the potential exists for asbestos debris. The MMP will address how to identify asbestos debris and steps to be taken if suspect asbestos materials are discovered.

All disturbance activities in soil known to contain ACM will be performed in accordance with the CDPHE Regulations, Section 5.5.7. Soil that is suspected of being contaminated with ACM will be observed continuously by a certified asbestos building inspector (CABI).

4.3.2 Post Construction

Dermal: There will not be the potential for dermal exposure to contaminated soil or groundwater. The majority of the site will be covered with structures or roads. Only a small portion of the site will have landscaping. The landscaped areas will have two feet of clean fill to support plant growth and also to provide a buffer to the underlying non-native fill material.

Ingestion: There will not be the potential for ingestion (soil, dust, or groundwater) as the groundwater will not be used and non-native fill materials will be covered with either structures or roads. The landscaped areas will have a buffer of clean fill to prevent exposure.

Vapor Inhalation: The contaminated soil and groundwater is identified on the south one-third of the site which is also the location of the open air parking garage. The potential for vapor collection in the open air parking garage is minimal.

The potential exists for the migration of vapors in the sub-slab media to other parts of the building. A passive sub-slab vapor collection system will be designed and installed

to collect vapors in the retail and hotel areas of the development. The vapor collection system will be vented to the roof and have the potential to add blowers to provide a positive ventilation system.

The passive ventilation system will be monitored two times per year for the presence of VOC vapors. If VOCs are detected at half of the recommended exposure level for residential occupants, the passive system will be converted to an active system.

Leaching to Groundwater. The site will essentially be capped with impervious structures and roads which will prevent the leaching of contaminants into the groundwater.

Migration to Surface Water. The site will essentially be capped with impervious structures and roads which will prevent stormwater contact with non-native fill materials. Stormwater will be routed away from the site.

Asbestos Inhalation. The site will essentially be capped with impervious structures and road which will prevent contact with non-native fill materials and potential asbestos debris.